

(12) UK Patent Application (19) GB (11) 2 158 044 A

(43) Application published 6 Nov 1985

(21) Application No 8410942

(22) Date of filing 28 Apr 1984

(71) Applicant
Mega Plastic Industries (Proprietary) Limited
(South Africa),
Spanner Road, Clayville, Transvaal Province, Republic of
South Africa

(72) Inventor
Michael James Warwick

(74) Agent and/or Address for Service
Wilson Gunn & Ellis,
41-51 Royal Exchange, Cross Street, Manchester M2 7BD

(51) INT CL⁴
B65D 1/36

(52) Domestic classification
B8P E2B

(56) Documents cited
GB A 2079256 GB 1120067
GB 1330778 GB 1032916
GB 1319726 EP A1 0099827

(58) Field of search
B8P

(54) Crate

(57) A bottle crate having a body with a plurality of sockets for receiving lower portions of bottles is capable of resting on bottles in a subjacent crate so that it need not rest on the subjacent crate. This enables the height of the crate to be reduced. Thus, formations (12) depend downwardly from the body and define sockets (20) for receiving upper portions of bottles. The formations are locatable at least partly in sockets (14) of a similar crate for enabling the crates to be stacked. The secondary sockets have surfaces (24) for resting on shoulders of the bottles in a subjacent crate. This can provide sufficient stability to enable crates containing bottles to be stacked for transportation.

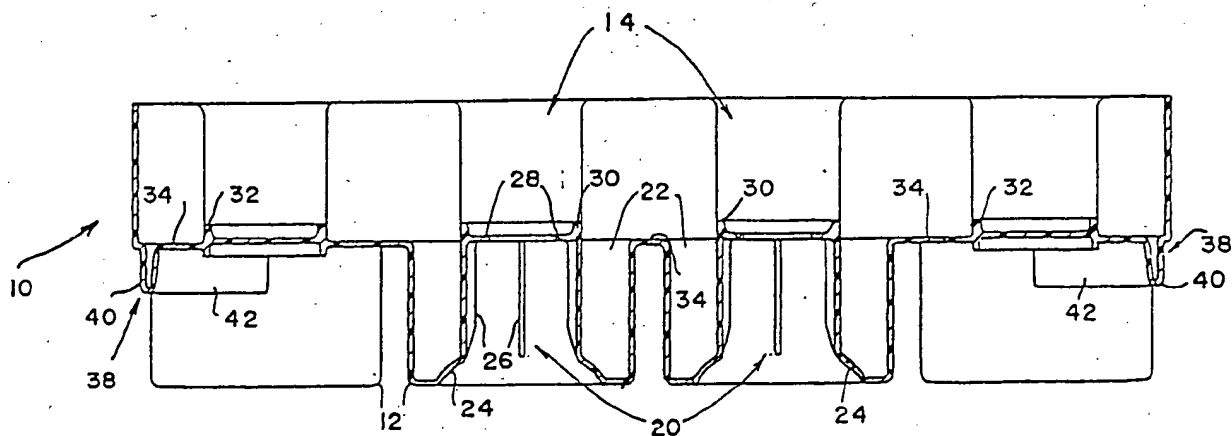
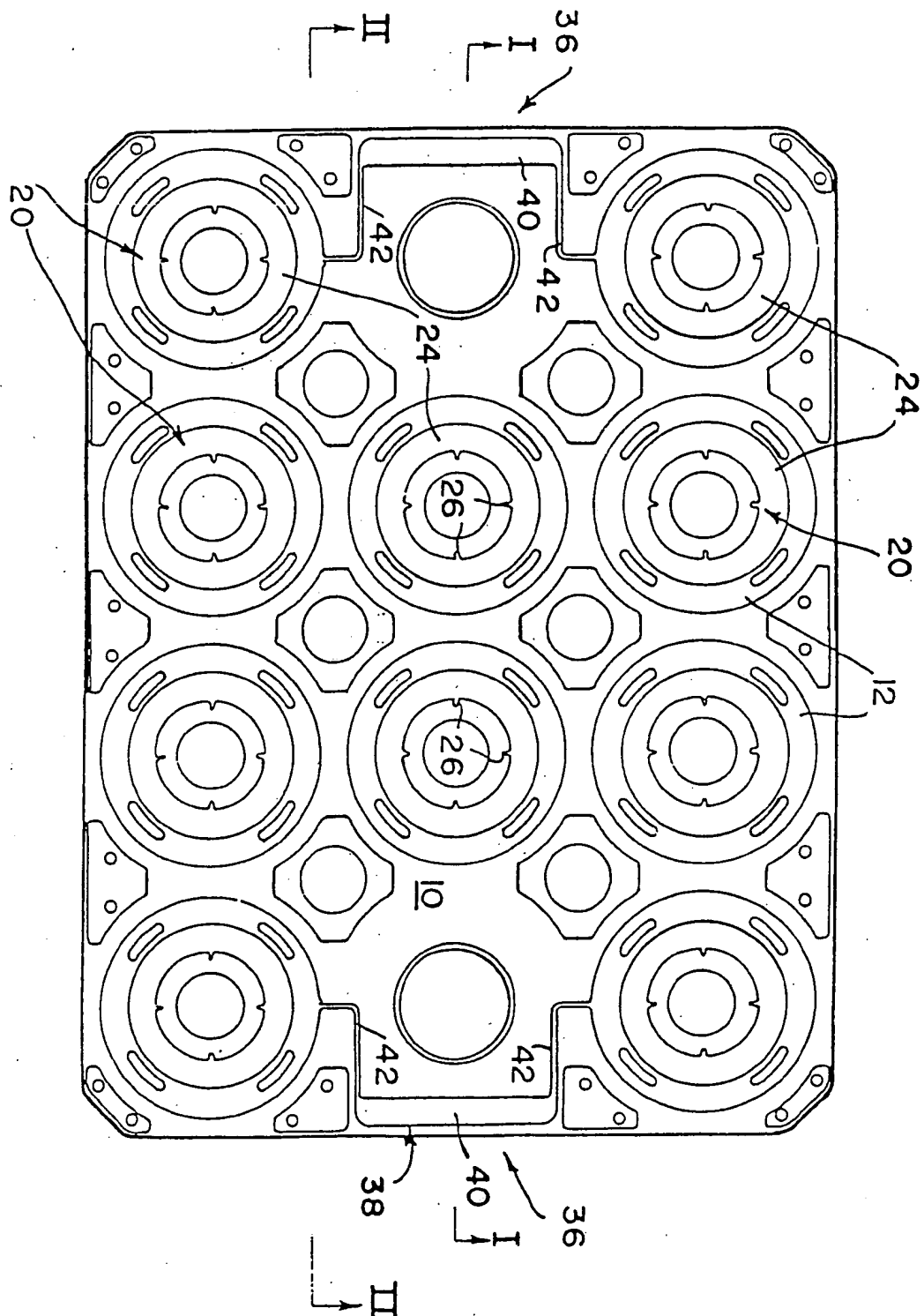


FIG. 3

GB 2 158 044 A



2158044

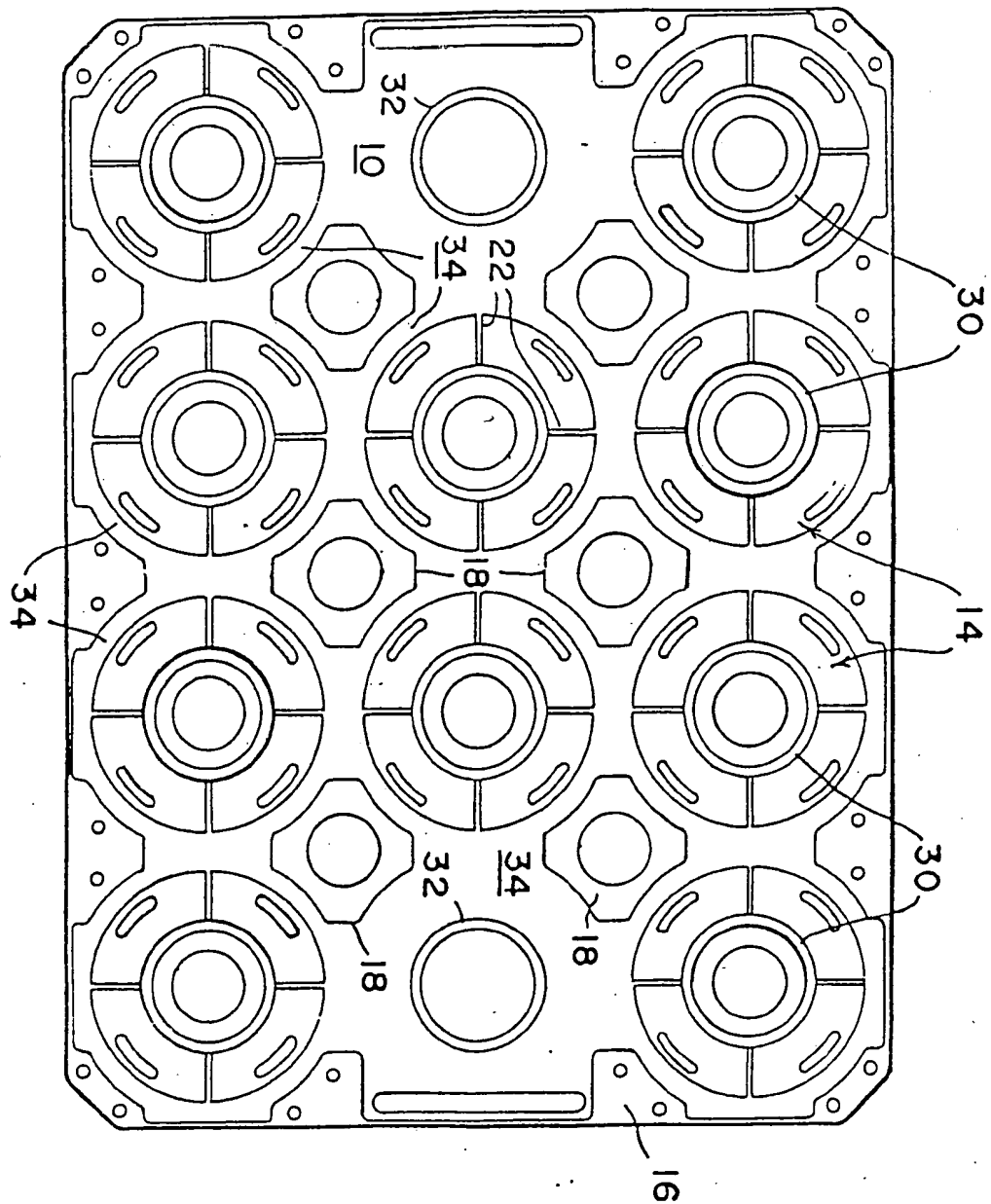


FIG. 2

3.

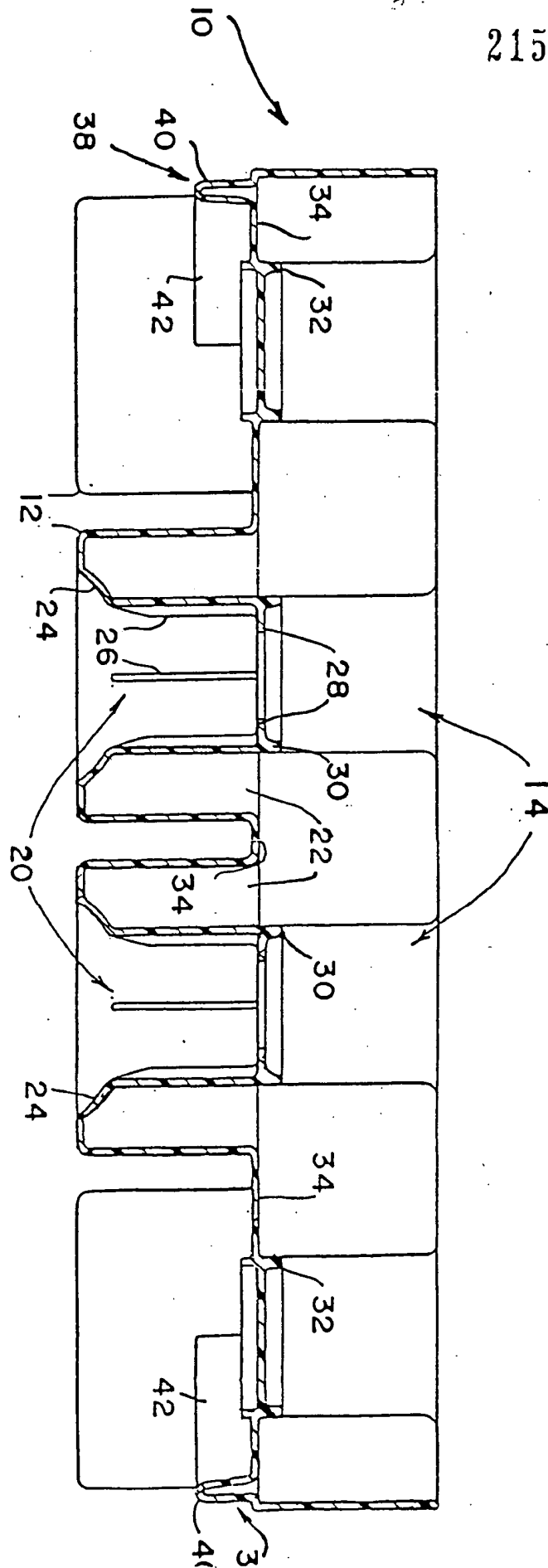


FIG. 3

2153044

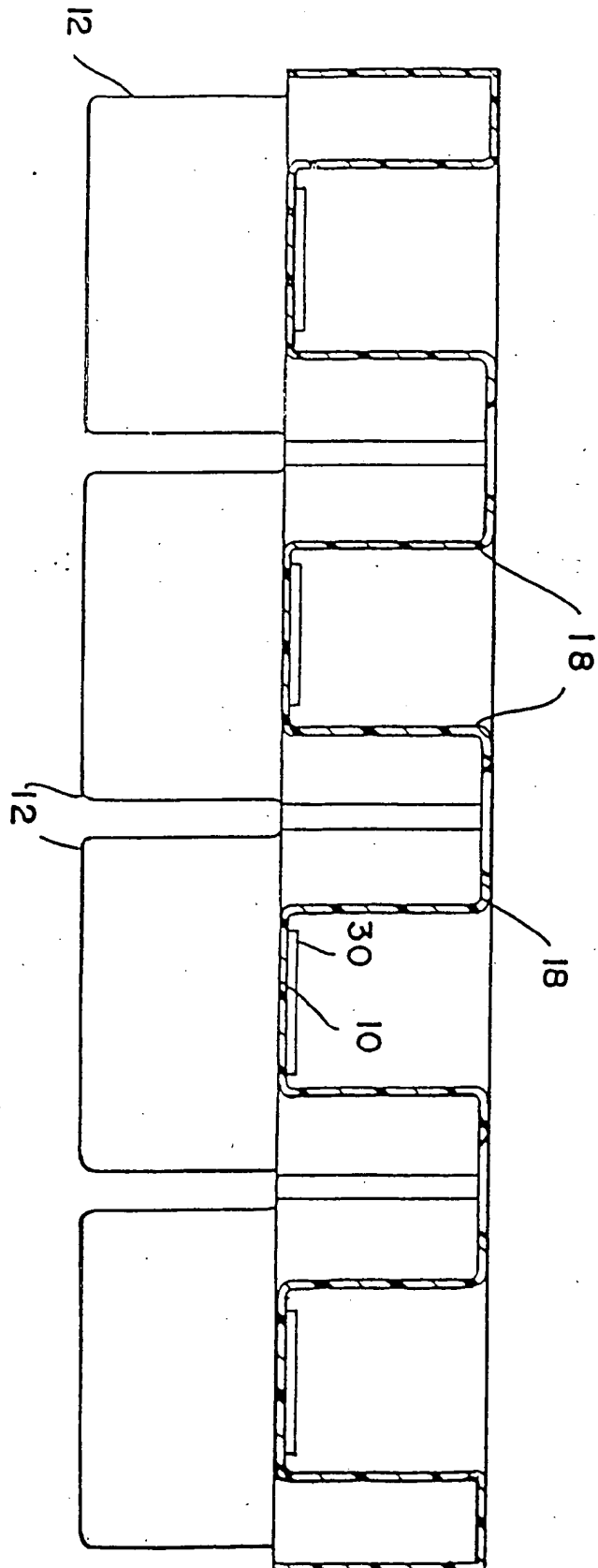


FIG. 4

SPECIFICATION

Crate

5 This invention relates to a bottle crate.

According to one aspect of the invention, there is provided a bottle crate comprising a plurality of primary sockets for receiving lower portions of bottles, and a plurality of secondary sockets for receiving upper portions of bottles, the secondary sockets having means for engaging shoulder portions of bottles received therein.

The primary sockets may be formed in a body of the crate, and the secondary sockets may be formed in formations generally depending downwardly from the body.

According to an alternative aspect of the invention, there is provided a bottle crate comprising a body at least partly defining a plurality of primary sockets for receiving lower portions of bottles, and a plurality of formations generally depending downwardly from the body and at least partly defining secondary sockets for receiving upper portions of bottles, the formations being locatable at least partly in primary sockets of a similar crate for enabling the crates to be stacked.

Location of the formations of one crate in the primary sockets of a subjacent crate can enable crates to be stacked so that the overall stacked height of several crates stacked in this way is much less than the cumulative total of the heights of all of the crates. In a preferred form of the invention, the formations and primary sockets are such that downwardly depending parts of the formations can be received substantially wholly within the primary sockets of a subjacent crate.

The formations defining the secondary sockets may each have any suitably disposed inner surface or surfaces for engaging shoulder portions of bottles received in the secondary sockets in such a way that the crate can be supported on the shoulder portions of the bottles. This enables bottles extending into the primary sockets of one crate and into the secondary sockets of a crate located above it to support the upper crate. Thus, crates in which bottles are located can be stacked above one another to hold the bottles in position even if the height of each crate body is much less than the height of the bottles and the crates located one above another do not touch each other.

The formations or the body may have means for restricting or inhibiting movement of the necks of bottles extending into the secondary sockets in directions transverse to the axes of the bottles, and this arrangement, together with the provision of the surface or surfaces for engaging the shoulder portions of the bottles, can help to stabilize stacked bottles and crates.

The primary sockets may be dimensioned snugly to receive the lower portions of suitably shaped bottles resting on suitable means provided at lower ends of the sockets, and this can also provide some stability. The support means may be formed by shoulders of a base of the body or by upper parts of the formations, which may extend slightly above the

level of the base, if desired.

In each aspect of the invention, the crate may be formed of moulded plastics material, preferably as a unitary crate, the formations then being integral with the body.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, in which

Figure 1 is an under plan view of a crate;

75 *Figure 2* is a plan view of the same crate;

Figure 3 is a side view of the crate, sectioned on the line I-I in *Figure 1*; and

Figure 4 is a side view of the crate, sectioned on the line II-II in *Figure 1*.

80 The crate shown in the drawing is a one-piece crate of moulded plastics material, designed for receiving bottles of a predetermined shape. The crate comprises a body with a base 10 and formations 12 integral with and primarily depending downwardly from the base, ten such formations being provided in the embodiment shown.

The body defines twelve uniformly positioned primary sockets 14. The sockets are bordered by a peripheral wall 16 of the body and hollow pillar-like formations 18 spaced from the wall 16 and extending upwardly from the base. Each primary socket is intended snugly to receive the lower portion of a bottle.

Immediately beneath and co-axially aligned with each of ten of the primary sockets 14 there is a secondary socket 20, each secondary socket being formed within a respective formation 12. As the drawings show, each formation 12 is double-walled and is provided with strengthening webs 22. An inner wall of each formation 12 provides an annular, inclined and concave inner shoulder surface 24 for engaging a concave shoulder portion of a bottle having a neck extending into the secondary socket. The face 24 is profiled to suit particular bottles with which the crate is to be used. Ribs 26 extend inwardly from the wall 22 of each formation 12 to guide and locate the neck and a closure member of a bottle. Each formation 12 is designed so that, when its surface 24 engages the shoulder portion of a bottle, the closure member on the bottle is spaced from an annular flange 28 towards the upper part of the respective formation, thus reducing the likelihood of damage to the closure member.

The upper part of each formation 12 is an annular rim 30 which extends upwardly above the level of the base for engaging the bottom of a bottle received in the socket 14 is the bottom of the bottle is flat or slightly concave. Similar annular rims 32 are provided in sockets 14 which are not above formations 12. However, the base is provided with annular surfaces 34 at the bottom of each of the sockets 14 for engaging the bottom of a bottle if the bottom of the bottle is concave to such an extent that the bottle will not rest on a rim 30 or 32.

125 The primary sockets 14 and formations 12 are dimensioned and located so that, when crates similar to that shown are stacked one on top of another, the formations 12 of one crate extend downwardly into the primary sockets 14 of another crate and are substantially wholly received within

the primary sockets. This means that the total height of the crates, when stacked, is substantially less than the cumulative total of the heights of all of the crates.

When the crates are to be used for transporting bottles, the lower portions of the bottles are located in the primary sockets 14 and are snugly received therein. One crate containing bottles is then stacked on top of another crate containing bottles so those bottles having their lower portions in the primary sockets 14 of one crate also have their upper portions in the secondary sockets 20 of another crate. The inner surfaces 24 of the secondary sockets 20 engage the shoulders of these bottles, and the upper crate is therefore supported on the bottles of the lower crate. The design of the formations and sockets is such that undesirable tilting or rocking of the stacked crates is limited.

In order to enable the crates to be carried manually, two formations 12 have been omitted from locations 36 opposite ends of the crate, as shown. In these locations 36, the ends of the crates are provided with square U-shaped ribs 38 each with a hollow central part 40 and spaced limbs 42 to provide a hand grip arrangement on the bottom of the base.

CLAIMS

1. A bottle crate comprising a plurality of primary sockets for receiving lower portions of bottles, and a plurality of secondary sockets for receiving upper portions of bottles, the secondary sockets having means for engaging shoulder portions of bottles received therein.

2. A crate according to Claim 1, wherein the primary sockets are formed in a body of the crate, and the secondary sockets are formed in formations generally depending downwardly from the body.

3. A bottle crate comprising a body at least partly defining a plurality of primary sockets for receiving lower portions of bottles, and a plurality of formations generally depending downwardly from the body and at least partly defining secondary sockets for receiving upper portions of bottles, the formations being locatable at least partly in primary sockets of a similar crate for enabling the crates to be stacked.

4. A crate according to Claim 3, wherein the formations and primary sockets are such that downwardly depending parts of the formations can be received substantially wholly within the primary sockets of a similar subjacent crate.

5. A crate according to Claim 3 or 4, wherein the formations defining the secondary sockets each have any suitably disposed inner surface or surfaces for engaging shoulder portions of bottles received in the secondary sockets in such a way that the crate can be supported on the shoulder portions of the bottles.

6. A crate according to Claim 3, 4 or 5, wherein the formations have or the body has means for restricting or inhibiting movement of the necks of bottles extending into the secondary sockets in directions transverse to the axes of the bottles.

7. A crate according to any preceding claim,

which is formed of moulded plastics material as a unitary crate, the formations being integral with the body.

8. A crate, substantially as herein described with reference to the accompanying drawings.

Printed in the UK for HMSO, D8818935, 9.85, 7102.
Published by The Patent Office, 25 Southampton Buildings, London,
WC2A 1AY, from which copies may be obtained.